



# Australian Bureau of Statistics

**6202.0 - Labour Force, Australia, Mar 2017**  Quality Declaration

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## ANNUAL SEASONAL RE-ANALYSIS

### INTRODUCTION

The annual seasonal re-analysis of the Labour Force series was conducted on estimates up to February 2017. The seasonally adjusted and trend estimates in this issue reflect adjustments made as a result of this re-analysis.

While combined seasonal factors for the complete time series are estimated each month, the parameters and prior corrections are reviewed annually at a more detailed level than is possible in the monthly processing cycle. The annual seasonal re-analysis takes into account each additional year's original data and assesses the appropriateness of seasonal adjustment parameters and prior corrections.

Also implemented as part of this year's annual seasonal re-analysis are minor changes to the filter lengths used in Labour Force series, which the ABS summarised in a short article in the February 2017 issue of **Labour Force, Australia** (cat. no. 6202.0).

### WHAT IS SEASONAL ADJUSTMENT?

Labour Force data are collected monthly (or quarterly for some topics) using the same methods, which results in original (that is, unadjusted) monthly or quarterly time series. Seasonal adjustment is applied to some of the original series to remove influences that are:

- systematic and calendar related, for example school leavers joining the labour force every February; and/or
- systematic and related to holidays which move around between months but which still occur every year, for example Easter.

Systematic and calendar related influences which have the same timing, same direction and similar magnitude every year, are removed to create the seasonally adjusted series. The presence and size of influences due to moving holidays, the variable timing of the commencement of interviews in January and the timing of supplementary surveys are estimated using a regression-ARIMA framework and also removed. The regression-ARIMA framework enables these influences to be accurately estimated. Without accurate estimation of these effects, the seasonal pattern may be obscured, and the seasonal factors may be less accurate.

The seasonally adjusted series irregular component is removed to create the trend series. Seasonally adjusted and trend series are revised each month to take account of the latest original estimates.

The ABS aims to produce high quality seasonally adjusted estimates that are without systematic

related variation.

Seasonally adjusted aggregate hours worked estimates include more extensive corrections for the influence of public holiday and school holiday effects. Each moving holiday is estimated and removed in the aggregate state/territory estimates. State/territory level influences are used to estimate the school and public holiday effects in the Australia and full-time/part-time by sex estimates.

During each annual seasonal re-analysis, the framework for estimating moving holidays and variable timing of the commencement of interviews in January is assessed for appropriateness. This ensures that the impact of these influences are being appropriately estimated from year to year, that assumptions used in the regression-ARIMA framework continue to be valid, and to implement improvements in estimation methodology.

## **CHANGES TO THE SEASONAL FILTER LENGTHS**

As part of ongoing continuous improvement, the ABS has completed a review of the length of seasonal filters used in the Labour Force series. This review determined that changes to the lengths of seasonal filters for specific seasonally adjusted series would provide more stable seasonal factors and reduce the average size of revisions through the concurrent seasonal adjustment and trend estimation process.

The ABS has changed the filter lengths for the series listed below, which has resulted in minor one-off revisions to the time series in the March 2017 estimates, beyond that usually observed through the annual seasonal re-analysis process.

It is important to note that Labour Force series follow an 'aggregation structure', which means that improvements in component series will flow through to the higher level series. For example, an improved filter length for the 'Employed, Australia, Males, Part-time' series will lead to minor improvements to its higher level aggregate series - 'Employed, Australia, Males'.

### **Series published in 6202.0 with changed filter lengths:**

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#### **Employed Persons**

- Employed, Full-Time, Males
- Employed, Part-Time, Males
- Employed, Full-Time, Females
- Employed - Ages 15-24
- Employed, Part-Time, Males - Ages 15-24
- Employed, Part-Time, Males - Ages 15-64
- Employed, Full-Time, Females - Ages 15-24
- Employed, Part-Time, Females - Ages 15-24
- Employed, New South Wales, Males
- Employed, New South Wales, Females
- Employed, Full-Time, New South Wales, Males
- Employed, Full-Time, Northern Territory, Females
- Employed, Victoria, Males
- Employed, Victoria, Females
- Employed, Full-Time, Victoria, Males
- Employed, Queensland, Males
- Employed, Full-Time, Queensland, Males
- Employed, Full-Time, Queensland, Females
- Employed, South Australia, Males
- Employed, South Australia, Females
- Employed, Full-Time, South Australia, Males
- Employed, Full-Time, South Australia, Females
- Employed, Western Australia, Females

Employed, Full-Time, Western Australia, Females  
Employed, Tasmania, Males  
Employed, Tasmania, Females  
Employed, Full-Time, Tasmania, Males  
Employed, Full-Time, Tasmania, Females  
Employed, Northern Territory, Females  
Employed, Full-Time, Northern Territory, Males  
Employed, Australian Capital Territory, Females  
Employed, Full-Time, Australian Capital Territory, Females

Unemployed Persons  
    Unemployed, Males  
    Unemployed, Females  
    Unemployed, Full-Time, Males  
    Unemployed, Full-Time, Females  
    Unemployed, Part-Time, Females  
    Unemployed - Ages 15-24  
    Unemployed, Males - Ages 15-24  
    Unemployed, Males - Ages 25-34  
    Unemployed, Males - Ages 35-44  
    Unemployed, Males - Ages 55-99  
    Unemployed, Males - Ages 15-24  
    Unemployed, Males - Ages 25-34  
    Unemployed, Males - Ages 35-44  
    Unemployed, Males - Ages 55-99  
    Unemployed, Females - Ages 15-24  
    Unemployed, Females - Ages 45-54  
    Unemployed, Females - Ages 55-99  
    Unemployed, Full-Time, Males - Ages 15-24  
    Unemployed, Part-Time, Males - Ages 15-24  
    Unemployed, Full-Time, Females - Ages 15-24  
    Unemployed, Part-Time, Females - Ages 15-24  
    Unemployed, Part-Time, Males - Ages 15-64  
    Unemployed, Full-Time, Females - Ages 15-64  
    Unemployed, Part-Time, Females - Ages 15-64  
    Unemployed, New South Wales, Males  
    Unemployed, New South Wales, Females  
    Unemployed, Victoria, Males  
    Unemployed, Victoria, Females  
    Unemployed, Queensland, Males  
    Unemployed, Queensland, Females  
    Unemployed, South Australia, Males  
    Unemployed, South Australia, Females  
    Unemployed, Western Australia, Males  
    Unemployed, Western Australia, Females  
    Unemployed, Tasmania, Males  
    Unemployed, Tasmania, Females  
    Unemployed, Northern Territory, Males  
    Unemployed, Northern Territory, Females  
    Unemployed, Australian Capital Territory, Males  
    Unemployed, Australian Capital Territory, Females

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**Series published in 6291.0.55.001 with changed filter lengths:**

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Unemployed Persons  
    Unemployed, Long-term, Males  
    Unemployed, Long-Term, Females  
    Unemployed, Short-Term, Females

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**Series published in 6291.0.55.003 with changed filter lengths:**

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## Employed Persons

Employed, Arts and Recreation Services  
Employed, Other Services

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## **IMPACT ON THE LABOUR FORCE DATA**

To account for the changes made to the supplementary survey program from 2014, the seasonal adjustment parameters and prior corrections have been monitored and revised regularly on an ongoing basis. As a result, revisions to seasonally adjusted and trend estimates arising from the 2017 annual seasonal re-analysis have been minimal.

## **ONGOING REVIEW OF METHODOLOGY**

As part of a process of continuous improvement, the ABS will continue to explore options for further improving the quality of Labour Force time series. Such investigations may identify further optimisations.

The ABS will continue to provide updates on any developments in this space within **Labour Force, Australia** (cat. no. 6202.0), ahead of any changes being implemented as part of the 2018 annual seasonal re-analysis.

## **FURTHER INFORMATION**

For any queries regarding the implementation of these changes contact the National Information Referral Service on 1300 135 070, or via e-mail at [client.services@abs.gov.au](mailto:client.services@abs.gov.au).

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